

What is claimed is:

1. A misalignment amount detection apparatus for detecting a misalignment amount between a rotation center axis of a rotation angle position detector comprising first and second members provided so as to be relatively rotatable around the rotation center axis and having a scale on the one member and a reader on the other member and a rotation center axis of a rotary table on which said rotation angle position detector is disposed, comprising:

a first base secured to an upper face of said rotary table in a state wherein said first member of said rotation angle position detector is secured to an upper face of said first base,

a second base mounted on said first base via said second member and said first member so as to be relatively rotatable to said first base, in a state wherein said second member of said rotation angle position detector is secured to a lower face of said second base,

a first movable body provided so as to be relatively movable with respect to said second base along a first axis orthogonal to the rotation center axis of said rotary table,

a first guide mechanism, disposed on said

second base, for guiding said first movable body along said first axis,

a first position detector for detecting a relative positional relationship between said second base and said first movable body in a direction of said first axis,

a second movable body provided so as to be relatively movable with respect to said first movable body along a second axis orthogonal to the rotation center axis of said rotary table and intersecting said first axis,

a second guide mechanism, disposed on said first movable body, for guiding said second movable body along said second axis,

a second position detector for detecting a relative positional relationship between said first movable body and said second movable body in a direction of said second axis, and

restraining means for restraining a movement of said second movable body at least in a plane orthogonal to the rotation center axis of said rotary table.

2. An alignment apparatus comprising said misalignment amount detection apparatus as set forth in claim 1 and further comprising:

mounting means for mounting said first base on said rotary table so as to be movable along said first and second axes, and

position adjustment means for adjusting a position of said first base in the directions of said first and second axes.

3. The alignment apparatus as set forth in claim 2, wherein said position adjustment means comprises:

a drive mechanism for moving said first base in the directions of said first and second axes, and

a control section for moving said first base in the directions of said first and second axes by controlling an operation of said drive mechanism on the basis of detection positions in the directions of said first and second axes detected by said first and second position detectors.

4. An accuracy analysis apparatus for analyzing a rotation accuracy of a rotary table of a machine tool having said rotary table, a rotation drive mechanism for indexing said rotary table to a predetermined rotation angle position by rotating said rotary table and a control apparatus for controlling an operation of said rotation drive mechanism, comprising:

said alignment apparatus as set forth in claim 2 or 3, and

rotation accuracy analyzing means for analyzing the rotation accuracy of said rotary table on the basis of a rotation angle position commanded by said control apparatus and an actual rotation angle position of said rotary table detected by said rotation angle position detector.

5. An accuracy analysis apparatus for analyzing a rotation operation accuracy of a rotary table of a machine tool having said rotary table, a rotation drive mechanism for indexing said rotary table to a predetermined rotation angle position by rotating said rotary table, a rotation angle position detector for detecting a rotation angle position driven and controlled by said rotation drive mechanism, and a control apparatus for feedback-controlling said rotation drive mechanism on the basis of a rotation angle position detected by said rotation angle position detector, comprising:

said alignment apparatus as set forth in claim 2 or 3, and

operation accuracy analyzing means for analyzing the rotation operation accuracy of said

rotary table on the basis of the rotation angle position detected by said rotation angle position detector of said machine tool and the rotation angle position detected by said rotation angle position detector of said alignment apparatus.